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10/566,433	01/31/2006	Daisuke Mukai	5734-090631	5657

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EXAMINER	
ROE, JESSEE RANDALL	
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1793	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/566,433	MUKAI ET AL.	
	Examiner	Art Unit	
	Jessee Roe	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 January 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *6-12 and 14-23* is/are pending in the application.

4a) Of the above claim(s) *6-10,12,14 and 16* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *11,15 and 17-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of the Claims

Claims 6-12 and 14-23 are pending wherein claims 11 and 21-23 are amended, claims 1-5 and 13 are canceled and claims 6-10, 12, 14 and 16 are withdrawn from consideration.

Status of Previous Rejections

The previous rejection of claims 11, 15 and 17-23 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention is withdrawn in view of the Applicant's amendments to claims 11 and 21-23.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 11, 15 and 17-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaneko (US 6,261,517) alone, or alternatively in view of "Improvement of Characteristics of Hydrogen Storage of Mischmetal-Nickel-Manganese Alloy" as submitted on the IDS of 7 July 2009.

In regards to claims 11 and 21-23, Kaneko et al. ('517) discloses a rare earth

metal-nickel hydrogen storage alloy having a composition represented by the formula $RNi_a Mn_b Co_c Al_d X_e$, wherein R stands for one or more rare earth elements including Sc and Y and misch metal may be used as a starting material for industrial production (abstract and col. 4, lines 30-40); X stands for one or more elements selected from the group consisting of Fe, Cu, Zn, V, and Nb (abstract); a, b, c, d, and e satisfy the relations of $3.9 \leq a < 6$, $0.45 \leq b < 1.5$, $0.01 \leq c < 0.3$, $0.4 \leq d < 1$, $0 \leq e \leq 0.2$, and $5.2 \leq a+b+c+d+e \leq 7.5$ (abstract); and the alloy would have a $CaCu_5$ structure (abstract). The rare earth metal-nickel hydrogen storage alloy of Kaneko et al. ('517) is close enough to the low Co hydrogen storage alloy having a $CaCu_5$ crystal structure and composition represented by the general formula $Mm\ Ni_a Mn_b\ Al_c Co_d$, with the newly amended range of aluminum being $0.2 \leq c < 0.37$ wherein Mm is a Misch metal, $4.31 \leq a \leq 4.7$, $0.3 \leq b \leq 0.65$, , $0 < d \leq 0.35$, and $5.25 \leq a+b+c+d \leq 5.30$ of the instant invention that one having ordinary skill in the art would expect the same properties from the instant invention as in Kaneko ('517). MPEP 2144.05 I.

With respect to the recitation "wherein in a composition of $5.25 \leq a+b+c+d \leq 5.30$, the a-axis length of the crystal lattice of said $CaCu_5$ crystal structure is 500.5 pm and not more than 502.7 pm, and the c-axis length is not less than 405.6 pm and not more than 406.9 pm." in claim 11; "wherein, in a composition of $5.30 \leq a+b+c+d < 5.35$, the axis length of the crystal lattice is not less than 500.0 pm and not more than 502.4 pm, and the c-axis length is not less than 405.9 pm and not more than 407.2 pm" in claim 21; "wherein, in a composition of $5.35 \leq a+b+c+d < 5.40$, the a-axis length of the

crystal lattice is not less than 499.8 pm and not more than 502.3 pm, and the c-axis length is not less than 406.0 pm and not more than 407.3 pm" in claim 22; and "wherein, in a composition of $5.40 \leq a+b+c+d<5.45$, the a-axis length of the crystal lattice is not less than 499.7 pm and not more than 502.3 pm, and the c-axis length is not less than 406.1 pm and not more than 407.4 pm" in claim 23, these lattice dimensions would be expected in the structure disclosed by Kaneko et al. ('517) because Kaneko et al. ('517) discloses the same or a substantially similar composition and structure in addition to substantially the same process (casting and vacuum heat treatment) (col. 5, line 60 – col. 6, line 14). MPEP 2112.01 I. Alternatively, Kaneko et al. ('517) does not specify the claimed a-axis lengths and c-axis lengths.

In the Remarks filed 7 July 2009 (see page 12 of 15, paragraph 4), the Applicant admits that "Improvement of Characteristics of Hydrogen Storage of Mischmetal-Nickel-Manganese Alloy" teaches (last paragraph of page 93) that the axis length varies, and thus can be modified, depending on heat treatment conditions.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the heat treatment conditions, as disclosed by "Improvement of Characteristics of Hydrogen Storage of Mischmetal-Nickel-Manganese Alloy", in the heat treatment process, as disclosed by Kaneko et al. ('517), in order to achieve the desired axis lengths, as disclosed by "Improvement of Characteristics of Hydrogen Storage of Mischmetal-Nickel-Manganese Alloy" (last paragraph of page 93). MPEP 2144.05 II.

With respect to the recitation "wherein the pulverization residual rate obtained by

the following equation is 50% or more: Pulverization residual rate (%) = (post-cycling particle size/pre-cycling particle size) x 100, when a hydrogen storage alloy is ground and screened to select particles with a particle size in the range of 20 μm and 53 μm to provide hydrogen storage alloy powder, and after measuring with a particle size distribution measuring device the average particle size (pre-cycling particle size, D_{50}) of the hydrogen storage alloy powder, 2 g of the hydrogen storage alloy powder is weighed and placed into a PCT holder; the surfaces thereof are cleaned twice under hydrogen pressure of 1.75 MPa; then activation is carried out twice by introducing hydrogen of 3 MPa; next a cycle test using PCT device is repeated 50 times, wherein hydrogen gas of 3 MPa is introduced into 2.0 g of the hydrogen storage alloy powder to absorb hydrogen, and the hydrogen is desorbed at 45°C; and the average particle size of the hydrogen storage alloy powder after the test of the 50 cycles (post-cycling particle size, D_{50}) is measured with a particle size distribution measuring device" in claims 11 and 21-23, the Examiner notes that because Kaneko et al. ('517) discloses substantially the same composition and substantially the same process (casting and vacuum heat treatment this property would be expected. MPEP 2112.01 I. Furthermore, the language "when a hydrogen storage alloy is ground..." is language that suggests or makes optional but does not require steps to be performed. MPEP 2111.04.

In regards to claim 17, Kaneko et al. ('517) discloses $0.45 \leq b < 1.5$ for the formula $RNi_a Mn_b Co_c Al_d X_e$, which overlaps the range of $0.4 < b \leq 0.55$ as claimed (abstract).

In regards to claim 18, Kaneko et al. ('517) discloses $0.01 \leq c < 0.3$ for the $RNi_a Mn_b Co_c Al_d X_e$, which overlaps the range of $0 < d \leq 0.2$ for the $Mm\ Ni_a Mn_b Al_c Co_d$ as claimed (abstract).

In regards to claims 15, 19 and 20, Kaneko et al. ('517) discloses that the hydrogen storage alloy would be used as the anode material (negative electrode active material) for a battery(cell) (abstract and col. 7, lines 43-51).

Claims 11, 15, 17 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yasuda et al. (US 6,372,059) alone, or alternatively in view of "Improvement of Characteristics of Hydrogen Storage of Mischmetal-Nickel-Manganese Alloy" as submitted on the IDS of 7 July 2009.

In regards to claim 11, Yasuda et al. ('059) discloses a hydrogen storage alloy having a $CaCu_5$ structure represented by the formula $MmNi_a Mn_b Al_c Co_d$ wherein Mm denotes a misch metal, $4.0 \leq a \leq 4.3$, $0.25 \leq b \leq 0.4$, $0.25 \leq c \leq 0.4$, $0.3 \leq d \leq 0.5$, and $5.05 \leq a+b+c+d \leq 5.25$. Although claim 11 recites the range $4.31 \leq a \leq 4.7$, a prima facie case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties. MPEP 2144.05 I.

With respect to amended feature "$0.2 \leq c < 0.37$", Yasuda et al. ('059) discloses $0.25 \leq c \leq 0.4$ for the formula $MmNi_a Mn_b Al_c Co_d$. Therefore, Yasuda et al. ('059) meets the claim.

With respect to the recitations "wherein in a composition of $5.25 \leq a+b+c+d \leq 5.30$,

the a-axis length of the crystal lattice of said $CaCu_5$-type crystal structure is 500.5 pm and not more than 502.7 pm, and the c-axis length is not less than 405.6 pm and not more than 406.9 pm." of claim 11, Yasuda et al. ('059) discloses that the a-axis would be usually 500.3 to 501 pm and the c-axis would be between 404.9 and 405.8 pm (col. 3, lines 40-60). Alternatively, Yasuda et al. ('059) does not specify the claimed a-axis lengths and c-axis lengths.

In the Remarks filed 7 July 2009 (see page 12 of 15, paragraph 4), the Applicant admits that "Improvement of Characteristics of Hydrogen Storage of Mischmetal-Nickel-Manganese Alloy" teaches (last paragraph of page 93) that the axis length varies, and thus can be modified, depending on heat treatment conditions.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the heat treatment conditions, as disclosed by "Improvement of Characteristics of Hydrogen Storage of Mischmetal-Nickel-Manganese Alloy", in the heat treatment process, as disclosed by Yasuda et al. ('059), in order to achieve the desired axis lengths, as disclosed by "Improvement of Characteristics of Hydrogen Storage of Mischmetal-Nickel-Manganese Alloy" (last paragraph of page 93). MPEP 2144.05 II.

With respect to the recitation "wherein the pulverization residual rate obtained by the following equation is 50% or more: Pulverization residual rate (%) = (post-cycling particle size/pre-cycling particle size) x 100, when a hydrogen storage alloy is ground and screened to select particles with a particle size in the range of 20 μm and 53 μm to

provide hydrogen storage alloy powder, and after measuring with a particle size distribution measuring device the average particle size (pre-cycling particle size, D_{50}) of the hydrogen storage alloy powder, 2 g of the hydrogen storage alloy powder is weighed and placed into a PCT holder; the surfaces thereof are cleaned twice under hydrogen pressure of 1.75 MPa; then activation is carried out twice by introducing hydrogen of 3 MPa; next a cycle test using PCT device is repeated 50 times, wherein hydrogen gas of 3 MPa is introduced into 2.0 g of the hydrogen storage alloy powder to absorb hydrogen, and the hydrogen is desorbed at 45°C; and the average particle size of the hydrogen storage alloy powder after the test of the 50 cycles (post-cycling particle size, D_{50}) is measured with a particle size distribution measuring device" of claim 11, the Examiner notes that because Yasuda et al. ('059) discloses substantially the same composition and substantially the same process (casting and vacuum heat treatment this property would be expected (Examples). MPEP 2112.01 I. Furthermore, the language "when a hydrogen storage alloy is ground..." is language that suggests or makes optional but does not require steps to be performed. MPEP 2111.04.

In regards to claims 15 and 19, Yasuda et al. ('059) discloses that the hydrogen storage alloy would be used as the anode material (negative electrode active material) for a battery (col. 4, lines 18-24).

In regards to claim 17, Yasuda et al. ('059) discloses $0.25 \leq b \leq 0.4$ for the formula $MmNi_a Mn_b Al_c Co_d$, which overlaps the range of $0.4 < b \leq 0.55$ as claimed.

Claims 11, 15, 17, 19 and 21-23 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Kasashima et al. (US 5,910,379) with evidence from Takeshita et al. (Low-temperature heat-capacity study of Haucke compounds $CaNi_5$, YNi_5, $LaNi_5$, and $ThNi_5$) alone, or alternatively in view of "Improvement of Characteristics of Hydrogen Storage of Mischmetal-Nickel-Manganese Alloy" as submitted on the IDS of 7 July 2009.

In regards to claims 11 and 21-23, Kasashima et al. ('379) discloses a $LaNi_5$ rare earth metal-nickel hydrogen storage alloy having a composition represented by the formula $RNi_aCo_bAl_cM_d$, wherein R stands for one or more of La, Ce, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu and Y (abstract and col. 3, lines 10-26); M stands for one or more elements selected from the group consisting of Fe, Mn, Cr, and Cu (col. 3, lines 47-51); a, b, c, d, and e satisfy the relations of $3.0 \leq a \leq 4.5$, $0.30 \leq b \leq 1.0$, $0 \leq c \leq 0.6$, $0 < d \leq 0.5$, and $4.5 \leq a+b+c+d \leq 5.5$ (col. 3, lines 25-65). The composition of the rare earth metal-nickel hydrogen storage alloy of Kasashima et al. ('379) overlaps the low Co hydrogen storage alloy having a $CaCu_5$ crystal structure and composition represented by the general formula $Mm\ Ni_aMn_b\ Al_cCo_d$, with the newly amended range of aluminum being $0.2 \leq c < 0.37$ wherein Mm is a Misch metal, $4.31 \leq a \leq 4.7$, $0.3 \leq b \leq 0.65$, $0 < d \leq 0.35$, and $5.25 \leq a+b+c+d \leq 5.30$. MPEP 2144.05 I.

Kasashima et al. ('379) discloses a rare earth metal-nickel hydrogen storage alloy having a composition as set forth above having a $LaNi_5$ structure, but Kasashima et al. ('379) does not specify that a $LaNi_5$ structure would be a $CaCu_5$ crystal structure.

Takeshita et al. teaches that a $LaNi_5$ structure would be a type of $CaCu_5$ crystal

structure.

Therefore, the $LaNi_5$ structured rare earth metal-nickel hydrogen storage alloy, as disclosed by Kasashima et al. ('379), would be a type of $CaCu_5$ crystal structure, as evidenced by Takeshita et al.

With respect to the recitation "wherein in a composition of $5.25 \leq a+b+c+d \leq 5.30$, the a-axis length of the crystal lattice of said $CaCu_5$ crystal structure is 500.5 pm and not more than 502.7 pm, and the c-axis length is not less than 405.6 pm and not more than 406.9 pm." in claim 11; "wherein, in a composition of $5.30 \leq a+b+c+d<5.35$, the axis length of the crystal lattice is not less than 500.0 pm and not more than 502.4 pm, and the c-axis length is not less than 405.9 pm and not more than 407.2 pm" in claim 21; "wherein, in a composition of $5.35 \leq a+b+c+d<5.40$, the a-axis length of the crystal lattice is not less than 499.8 pm and not more than 502.3 pm, and the c-axis length is not less than 406.0 pm and not more than 407.3 pm" in claim 22; and "wherein, in a composition of $5.40 \leq a+b+c+d<5.45$, the a-axis length of the crystal lattice is not less than 499.7 pm and not more than 502.3 pm, and the c-axis length is not less than 406.1 pm and not more than 407.4 pm" in claim 23, these lattice dimensions would be expected in the structure disclosed by Kasashima et al. ('379) because Kasashima et al. ('379) discloses the same or a substantially similar composition and structure in addition to substantially the same process (casting and vacuum heat treatment) (col. 5, lines 46-62). MPEP 2112.01 I. Alternatively, Kasashima et al. ('379) does not specify the claimed a-axis lengths and c-axis lengths.

In the Remarks filed 7 July 2009 (see page 12 of 15, paragraph 4), the Applicant admits that "Improvement of Characteristics of Hydrogen Storage of Mischmetal-Nickel-Manganese Alloy" teaches (last paragraph of page 93) that the axis length varies, and thus can be modified, depending on heat treatment conditions.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the heat treatment conditions, as disclosed by "Improvement of Characteristics of Hydrogen Storage of Mischmetal-Nickel-Manganese Alloy", in the heat treatment process, as disclosed by Kasashima et al. ('379), in order to achieve the desired axis lengths, as disclosed by "Improvement of Characteristics of Hydrogen Storage of Mischmetal-Nickel-Manganese Alloy" (last paragraph of page 93). MPEP 2144.05 II.

With respect to the recitation "wherein the pulverization residual rate obtained by the following equation is 50% or more: Pulverization residual rate (%) = (post-cycling particle size/pre-cycling particle size) x 100, when a hydrogen storage alloy is ground and screened to select particles with a particle size in the range of 20 μm and 53 μm to provide hydrogen storage alloy powder, and after measuring with a particle size distribution measuring device the average particle size (pre-cycling particle size, D_{50}) of the hydrogen storage alloy powder, 2 g of the hydrogen storage alloy powder is weighed and placed into a PCT holder; the surfaces thereof are cleaned twice under hydrogen pressure of 1.75 MPa; then activation is carried out twice by introducing hydrogen of 3 MPa; next a cycle test using PCT device is repeated 50 times, wherein hydrogen gas of 3 MPa is introduced into 2.0 g of the hydrogen storage alloy powder to

absorb hydrogen, and the hydrogen is desorbed at 45°C; and the average particle size of the hydrogen storage alloy powder after the test of the 50 cycles (post-cycling particle size, D_{50}) is measured with a particle size distribution measuring device" in claims 11 and 21-23, the Examiner notes that because Kasashima et al. ('379) discloses substantially the same composition and substantially the same process (casting and vacuum heat treatment) this property would be expected. MPEP 2112.01 I. Furthermore, Kasashima et al. ('379) teaches that the average grain diameter of the alloy powder would be in the range of 5 to 50 μm (col. 5, lines 63-67) in addition to pulverizing such that the average alloy particle diameter would be 35 μm (col. 6, lines 41-44) and the language "when a hydrogen storage alloy is ground..." is language that suggests or makes optional but does not require steps to be performed. MPEP 2111.04.

With respect to the recitation "wherein $0.4< b\leq 0.55$ in the general formula $MmNi_a Mn_b Al_c Co_d$" in claim 17, in Kasashima et al. ('379), "d" corresponds with the manganese content and the range is $0<d\leq 0.5$ (col. 3, lines 25-65).

In regards to claims 15 and 19, Kasashima et al. ('379) discloses that the hydrogen storage alloy would be used as a negative electrode active material (abstract, col. 1, lines 7-11, and col. 6, lines 1-9).

Response to Arguments

Applicant's arguments filed 19 January 2010 have been fully considered but they are not persuasive.

First, the Applicant primarily argues that Kaneko et al. ('517) teaches away from the Applicant's claimed range of Al of $0.2 \leq c < 0.37$ by stating that "Al is in the range of $0.4 \leq d \leq 1$, preferably $0.5 \leq d < 0.7$. If 'd' is less than 0.4, the hydrogen equilibrium pressure of the alloy increases and the corrosion resistance of the alloy decreases".

In response, the Examiner notes that although Kaneko et al. ('517) desires to have aluminum in the range of 0.4 to 1 with respect to "d" to have a predetermined level of corrosion resistance, this does not mean that hydrogen storage alloys with aluminum contents of less than 0.4 are taught against in Kaneko et al. ('517) or unknown, but just inferior. A known or obvious composition does not become patentable simply because it has been described as somewhat inferior to some other product for the same use. MPEP 2123 II.

Second, the Applicant primarily argues that the findings set forth in the Declaration under 37 C.F.R. § 1.132 of Shinya Kagei submitted with the amendment of July 7, 2009 and labeled Declaration 1 sets forth experimental data that confirms that the a-axis pulverization residual rate of the storage alloy disclosed in Kaneko et al. ('517) does not fall within the range specified in independent claims 11 and 21-23 by reproducing Example I of Kaneko et al. ('517). The Applicant further argues that the experimental data in Kaneko et al. ('517) clearly shows the hydrogen storage alloy of Kaneko et al. ('517) does not have an a-axis length that falls within the claimed range and the pulverization rate of the hydrogen storage alloy does not fall within the claimed range.

In response, the Examiner notes that although the Declaration under 37 C.F.R. §

1.132 of Shinya Kagei submitted with the amendment of July 7, 2009 and labeled Declaration 1 may set forth the a-axis lengths and c-axis lengths of Example I of Kaneko et al. ('517) where the alloy was heated to 900°C for 5 hours, the Examiner also notes that notes that Kaneko et al. ('517) discloses that the heat treatment of the alloy would be conducted in the range of 700 to 950.degree. C. for 0.1 to 12 hours under vacuum or inert atmosphere. Just because the alloy in Example I did not have the a-axis and c-axis lengths to meet the claims of the instant invention does mean none of the heat treatment schedules disclosed in Kaneko et al. ('517) would meet the instant claims. Furthermore, it is apparent from English Translation of the boxed paragraph on page 93 and Figure 7A disclosed in "Improvement of Characteristics of Hydrogen Storage of Mischmetal-Nickel-Manganese Alloy" that the a-axis and c-axis lengths depend on the heat treatment conditions and the a-axis length tends to decrease with increasing heating time.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jessee Roe whose telephone number is (571)272-5938. The examiner can normally be reached on Monday-Thursday and alternate Fridays 7:00 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy V. King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Roy King/
Supervisory Patent Examiner, Art Unit 1793

/JR/